A Plan for Modifying Workshop Models Based Upon Glenn M. Parker’s Team Roles

Andrew Smith and Robert Rigobello

University of Rochester, CAS 352

Author Note

Correspondence concerning this article should be addressed to Andrew Smith, University of Rochester, 500 Joseph C. Wilson Blvd CPU box 271140, Rochester, NY 14627.

E-mail: asmith72@u.rochester.edu
Abstract

In this study, we sought to demonstrate the importance of Glenn M. Parker’s team roles from his book, *Team Players and Teamwork*, by identifying role players within a problem-solving group found in Organic Chemistry 203 workshop at the University of Rochester and identifying the effectiveness of the workshops as a result of role fulfillment. In this study, a survey adopted and modified from Parker’s Team-Player Survey was given to students in four different Chemistry 203 workshops to determine their roles within a group and their perceived need for the participation of other Parker roles. The data collected was then used to devise a plan for more efficient workshop proceedings.
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Success, when problem solving as a group, is highly dependant upon many factors of both the group and the leader. Many courses and programs emphasize, to a great extent, the role of a leader in maximizing group cohesiveness and productivity with appropriate leadership styles. Although leadership is clearly a very important role in the effectiveness of a group, so are other roles less emphasized in popular group problem solving literature, such as the team roles established by Glenn M. Parker in his book, *Team Players and Teamwork*.

Workshops for Organic Chemistry 203 generally have 8-12 students and one workshop teaching assistant, who had done well in the course material the previous year. The workshop students are meant to solve several multiple part problems that solidify course material already covered in lecture over a two-hour period with only guidance, not instruction from the teaching assistant. Though workshop proceedings are largely left up to the teaching assistant, teaching assistants take a course themselves during the semester that instructs them upon good leadership styles in regards to helping students learn, which emphasizes the teaching assistant’s role in guiding students through the workshop.

Teaching assistants work as guides for workshops, providing guidance for students while the students work through the given problems, helping them understand and rationalize necessary material and resolving conflicts if and when they occur within the workshop. A teaching assistant needs to have a flexible teaching style that incorporates working with students and giving explanations using various learning styles, such as the seven styles Thomas Armstrong discusses in *Multiple Intelligences in the Classroom*. 
Thomas Armstrong lists the seven types of learning styles as: linguistic, learning through words, logical-mathematical, learning through mathematics and logical or numerical relationships, spatial, learning through comprehending something as it would be in three-dimensional space, body-kinesthetic, the use of body movements to understand a concept, musical, the use of musical expression or interpretation to learn a concept, interpersonal, learning a concept as it applies to relationships between people, and intrapersonal, learning a concept based upon its relation to oneself\(^1\). By maximizing the number of styles used, in addition to employing these styles in an as efficient manner as possible, workshop teaching assistants attempt to provide the best learning experience for the largest number of students.

However, the role of the teaching assistant is only one facet of a well-functioning workshop. The way in which group interactions of students occur within the workshop is an indicator of how successful a workshop will be. Multiple researchers have assigned group roles to help leaders identify member specialties and facilitate group progress.

Dr. Raymond M. Belbin came up with a theory of such roles that divides a functioning group into nine roles based upon their personalities and strengths as individuals. The nine-team roles are plant, resource investigator, chairman, shaper, monitor-evaluator, team worker, company worker, completer finisher, and specialist\(^2\). Belbin’s research focuses on teams performing at peak efficiency only when the team possesses members that can fulfill all of the nine roles. Although a valuable theory,

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workshops often only consist of eight to ten individuals, and applying a model with just as many roles as people would be infeasible in this study. Furthermore, Belbin’s model is modeled specifically for business practices, some roles encompassing people with political, human, and industrial resources not applicable to a group as small and specific in nature as a workshop.

Glenn Parker, through research and observation, has identified four different roles under which all members of a group fall. Parker’s roles are also modeled after business teams; however, they are general enough to apply to all goal-oriented groups. These roles Parker identifies as the contributor, collaborator, communicator and challenger. Each of these roles fulfill specific needs of a group, and only by having an effective member of each can a group hope to work optimally.

The contributor is a group member who easily stays on task, is self-driven, and provides the group with technical information and data. Contributors often require that the group they are in maintain high performance and manage time. Collaborators, on the other hand, easily envision the goal of the group and guides members towards that vision. However, collaborators are also willing to contribute to the work of the group outside of their role. Communicators, the next group role, are attentive listeners and facilitate the sharing of knowledge to other members of the group. Communicators often resolve conflicts, push the group to come to a consensus, and allow a more relaxed atmosphere.

The last group role, challengers, are members who question the vision and methods of the team and are willing to openly disagree with a higher authority, such as a workshop

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teaching assistant in this case. Challengers often push the group to take thought-out risks.

Despite the importance of incorporating Parker’s roles into group problem solving, the workshop model does not accommodate Parker’s roles nearly as well as Armstrong’s different learning styles for one major reason. The contributor and collaborator are roles that are perceived as favorable roles for individuals to have. From our personal experiences, the contributor and the collaborator tend to play a larger role in navigating the workshop than do the communicator and the challenger.

Little support is given to communicators and challengers in the workshop environment because questioning answers and transfer of conceptual knowledge are ignored in an attempt to quickly achieve the correct answer under the assumption that teaching assistants will fill in the role of the challenger and communicator if the group was wrong. This often stems from the assumption from workshop members that the teaching assistant has a knowledge advantage, thus the workshop need only attempt to solve the problem once, as quickly as possible because the teaching assistant will identify any important errors in the methods and demonstrate them to the entire group. It is important to note that this undermines the effectiveness of the workshop group due to its dependence upon the leader.

The teaching assistant should clarify information, but should not answer every question that arises within the group. Thus, the individual strengths of each role do not often reveal themselves because effective groups are not allowed to manifest without a conscious effort on the part of the teaching assistant to force the workshop to solve
problems on their own, correct themselves when they are wrong, and communicate the knowledge to all members of the group.

Our research hopes to resolve this issue in order to provide a more productive and enjoyable environment for both the students and the teaching assistant through allowing the communicator and challenger to become more prominent roles within the workshop and by encouraging stronger student-student interactions between workshop students.

**Method**

In order to study this issue, members of four workshops filled out a survey that the researchers adapted from Parker’s Team-Player Survey, attached as appendix A of this paper. The Survey was designed to distinguish relative proportions of role players by asking a series of questions that would be answered differently by different role types. Furthermore, the students would be asked a question within the survey that could be scored to determine what roles they thought needed to be improved upon. It was hypothesized that, in this study, the number of communicators and challengers would be lower than other roles. It was also hypothesized that students would perceive this discrepancy in their recommendations for workshop improvement. The results of the survey are shown on pages 7 and 8.

**Results**

As we can see in Figure A, our hypothesis was correct in regards to the disproportionate amount of contributors as compared to communicators and challengers. However, what was unexpected was that nearly all workshop members registered as contributors and the difference between the number of collaborators, communicators, and
A PLAN FOR MODIFYING WORKSHOP MODELS
BASED UPON GLENN M. PARKER’S TEAM ROLES

Figure A: Total Number of Students per Role.

Figure B: Total Points Each Role Earned
(Points assigned based upon our survey, appendix A.)
Figure C: Suggested Improvements by Parker Type
(Points assigned based upon student responses to the last question on the survey, found in appendix A.)
challengers was insignificant. Students perceived a higher need for contributors than for communicators, despite the fact that there were far more contributors than communicators, in contrary to our hypothesis. Students did perceive a great need for challengers, however, as hypothesized. It was also notable that, although there were few collaborators, communicators, and challengers, many students scored points in those areas, as seen in Figure B, therefore possessing some of the same characteristics of those roles, even if they scored higher in other roles.

Discussion

The disproportionate amount of any role other than contributor, may suggest that the adapted survey is biased as to inflate the contributor role, making conclusions about other roles hard. This may suggest that our survey needs to be revised. It is notable, however, that students clearly demonstrated the desire for the presence of other roles that lacked representation in the workshop, in particular, the collaborator and the challenger.

In order to improve upon the workshop model in future to address skewed roles, a more extensive survey capable of discerning Parker roles of students could be taken by workshop students at the beginning of the semester. Although assigning students to different workshops based upon parker roles would be infeasible due to scheduling conflicts, it would be possible for workshop leaders to give their workshop a survey from which they could base their teaching style.

Mindful of the parker roles, workshop leaders could break up their workshops into smaller problem solving groups that possessed multiple parker roles, or had people who scored high in multiple parker roles even if they did not identify as that role. Furthermore, workshop leaders could, when in large groups, force students with
particular parker roles that had not been active to participate, in order to facilitate the
function of the group. For instance, if a student identified as a challenger and no
challenging had occurred while the workshop as a whole was working on a problem, the
leader could ask that student what they thought about the way the group was solving the
problem, and if they thought there were other ways to consider, forcing them into a
challenger role.

In this study, we have demonstrated the relevance of Parker’s roles to workshop
management in the chemistry department. Importantly, we have demonstrated a student
perceived need for higher participation of certain Parker role types during workshop,
collaborators and challengers respectively. To mollify this problem and improve
workshop performance, we have recommended that workshop leaders have students take
surveys assigning parker roles at the beginning of the semester. We recommend that
workshop leaders use that knowledge to facilitate workshop performance by eliciting role
type participation and dividing students into appropriate role type groups. Work must be
put into modifying the current survey and making it more extensive before implementing
this plan, however, which could easily be achieved.
References


Appendix A

Survey for CHM 203 Workshop

Please rank each question’s answers in order of how they describe you and your views, with a 4 being the most important and a 1 being the least important (so every question should have a 1 through 4 for their answers).

1. At workshop, I am someone who:
   a) provides information to my group
   b) helps my group relate a particular problem to bigger ideas and concepts
   c) tries to get everyone in my group involved in our work
   d) often questions the correctness of the group’s work

2. Working in a group requires that:
   a) everyone come prepared to each workshop
   b) everyone sets some goals that they can work towards in each workshop
   c) everyone listens to each other’s ideas earnestly
   d) everyone challenges an answer or way of solving a problem if they view it as wrong

3. The role of a TA should be:
   a) giving the workshop as much information as possible to work with
   b) ensuring that questions in the workshop are always related back to some larger concepts
   c) provide feedback on how well work is being performed
   d) honestly assesses how well everyone is working

4. An adjective that describes me well is:
a) hard-working
b) ambitious
c) helpful
d) candid

5. When the group has difficulty figuring out a problem, I:
   a) look at known information to resolve that problem
   b) relate a broader idea to that problem
   c) get others to discuss what they think about that problem
   d) evaluate what we are doing wrong and figure out that problem from there

6. When someone is working at less than their best, it is usually because:
   a) they did not come prepared to workshop
   b) they are short-sighted and do not “see the big picture” of organic chemistry
   c) they do no communicate with their peers as much as they should
   d) they simply go along with what others do without rationalizing things out themselves

Now think about what you most want to see improved in this workshop, using the same ranking system as above.

An improvement that can be made to the workshop is:
   a) focusing more on just solving problems
   b) tying individual problems to some larger framework to assist in future problem-solving
c) promoting more student-student communication and interaction

d) promoting an environment where the rationale behind everything is known